

## INDEX TO VOLUME 31

- Adenylate cyclase, solubilized, activity of bovine retina, the effects of catecholamines and of their inhibitors on, 659
- Adrenergic agents, beta, effect on blood vessels of the rat iris. I. Permeability to carbon particles, 289  
———, ———, ———, ———, ———. II. Morphological modifications of the vessel wall, 289
- , beta, receptors and isoproterenol-stimulated cyclic AMP formation in monkey iris and ciliary body, distribution of, 471
- Aerobic and anaerobic photolysis of lens protein, a comparison, 591
- Age-related changes in polypeptide composition of bovine lens fiber membranes, 495  
——— the vitreous and lens of rhesus monkeys (*Macaca mulatta*), 67
- Aging lens, immunologic detection of inactive enzyme molecules in, 573
- ALEXANDER, M. (see CLAYTON, R. M.), 553
- Alpha-crystallin A and B chains, comparison of their dissociated and associated states, 581
- Ambystoma maculatum* embryos implanted into ocular or extra-ocular sites of host larvae, DNA replication in lens vesicles of, 451
- Amino acid neurotransmitters, putative, localization in the human retina, 729
- Amphibian lens, some observations on the magnesium metabolism of, 665  
——— membranes, voltage-dependent potassium channels in; evidence from radiotracer and electrical conductance measurements, 637
- ANDREASSEN, T. T., SIMONSEN, A. H. and OXLUND, H., Biomechanical properties of keratoconus and normal corneas, 435
- Anaerobic and aerobic photolysis of lens protein, a comparison, 591
- ANSARI, N. H., AWASTHI, Y. C. and SRIVASTAVA, S. K., Role of glycosylation in protein disulfide formation and cataractogenesis, 9  
———, ——— (see SRIVASTAVA, S. K.), 425
- Aqueous humor flow inhibition by application of cold air to cornea, 479
- Arteriole, hyaloid, in bovine vitreous, the fine structure of, 129
- Assay, cycling, pyridine nucleotides in ocular tissues as determined by, 601
- ATP changes and oxygen consumption of the vertebrate photoreceptor, 271
- AWASTHI, Y. C. (see ANSARI, N. H.), 9
- AXELSSON, I. and HEINEGÅRD, D., Characterization of chondroitin sulfate-rich proteoglycans from bovine corneal stroma, 57  
———, ——— (see DAHL, I. M. S.), 443
- BAGG, A. (see CLARK, J. I.), 399
- BALAZS, E. A. (see BLOOM, G. D.), 129  
———, ——— (see DENLINGER, J. L.), 67, 81, 101  
———, ——— (see EL-MOFTY, A. A. M.), 147  
———, ——— (see GRAUE, E. L.), 119
- BALDWIN, G. F. and BENTLEY, P. J., Some observations on the magnesium metabolism of the amphibian lens, 665
- BARTHOLOMEW, R. S. (see CLAYTON, R. M.), 553
- BATTELLE, B.-A. and LAVAIL, M. M., Protein synthesis in retinas of rats with inherited retinal dystrophy, 251
- BENEDEK, G. B. (see CLARK, J. I.), 399
- BENEDETTI, E. L. (see BLOEMENDAL, H.), 513
- BENSCH, J. (see OHRLOFF, C.), 573
- BENTLEY, P. J. (see BALDWIN, G. F.), 665
- BERK, R. S. (see HAZLETT, L. D.), 21
- BERRY, C. C., BINDER, P. S. and KAHN, M., Distribution of cell areas in normal and transplanted corneas, 623
- Beta adrenergic agents, effect on blood vessels of the rat iris. I. Permeability to carbon particles, 289  
———, ———, ———, ———, ———. II. Morphological modifications of the vessel wall, 289
- , ——— receptors and isoproterenol-stimulated cyclic AMP formation in monkey iris and ciliary body, distribution of, 471
- crystallin Bp chain is internally duplicated and homologous with gamma-crystallin, 243  
———, ——— human, analysis of some immunochemical properties of, by radioimmunoassay, 389  
———, ———; studies on the  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ -crystallins, 41

- BETTELHEIM, F. A., On the birefringence of the lens, 481
- BHARGAVA, G., MAKMAN, M. H. and KATZMAN, R., Distribution of  $\beta$ -adrenergic receptors and isoproterenol-stimulated cyclic AMP formation in monkey iris and ciliary body, 471
- BILL, A. (see RASK, L.), 201
- BINDER, P. S. (see BERRY, C. C.), 623
- Biochemical properties of keratoconus and normal corneas, 435
- Biosynthesis of proteoglycans in corneal cell culture, the inhibition by retinoic acid of, 443
- Birefringence of the lens, 481
- ; a reply from Professor R. A. Weale, 483
- BLOEMENDAL, H., LENSTRA, J. A., DODEMONT, H., RAMAEKERS, E. C. S., GROENEVELD, A. A., DUNIA, I. and BENDETTI, E. L., SV40-transformed hamster lens epithelial cells: a novel system for the isolation of cytoskeletal messenger RNAs and their translation products, 513
- , ——— (see DRIESSEN, H. P. C.), 243
- Blood vessels of the rat iris, effect of beta adrenergic agents on; morphological modifications of the vessel wall, 299
- , ———, ———; permeability to carbon particles, 289
- BLOOM, G. D., BALAZS, E. A. and OZANICS, V., The fine structure of the hyaloid arteriole in bovine vitreous, 129
- BOUMAN, A. A., DE LEEUW, A. L. M. and BROEKHUYSE, R. M., Lens membranes. XII. Age-related changes in polypeptide composition of bovine lens fiber membranes, 495
- Bovine corneal stroma, characterization of chondroitin sulfate-rich proteoglycans from, 57
- lens, the distribution of trypsin inhibitor proteins in; a possible factor in preventing in vivo proteolysis, 411
- fiber membranes, age-related changes in polypeptide composition of, 495
- trypsin inhibitor, inactivation by ultraviolet irradiation, 313
- retina, the effects of catecholamines and of their inhibitors on the solubilized adenylate cyclase activity of, 659
- , specificity of serotonin uptake by; a comparison with tryptamine, 31
- vitreous, the fine structure of the hyaloid arteriole in, 129
- BRADLEY, R. H., LO, W.-K., KUSAK, J. and MAISEL, H., The cytoskeleton of the chicken lens fiber cells: a scanning and ultrastructural analysis, 487
- BRITTON, J. L. (see SHEARER, T. R.), 327
- BROEKHUYSE, R. M. (see BOUMAN, A. A.), 495
- Bullfrog retina, oxygen transport in, 725
- , ———; a reply, 727
- BURKE, J. M. and KOWER, H. S., Collagen synthesis by rabbit neural retina in vitro and in vivo, 213
- BUSHELL, A. R. (see MARCANTONIO, J. M.), 227
- Cadaver eyes, human, isolation of pure retinal vascular explants from, 247
- Calcium concentration, cortical opacity and fiber membrane structure in the calf lens, 399
- Calf lens, cortical opacity, calcium concentration and fiber membrane structure in, 399
- Carbamylation of lens proteins: a possible factor in cataractogenesis in some tropical countries, 567
- Carbon particle permeability of blood vessels of the rat iris; effect of beta adrenergic agents, 289
- Carp retina, spatial density of catecholaminergic cells in, 711
- CARPER, D. (see ZIGLER, J. S., Jr.), 389
- Cat retinas, isolated, high-affinity uptake of [ $^3$ H]taurine in; effects of  $\text{Na}^+$  and  $\text{K}^+$ , 373
- Cataract formation in glutathione peroxidase deficient-acatalasemic mice, effect of oxidative challenge on; defense system of the lens against oxidative damage, 425
- patients, individual, and their lenses, analysis of; a progress report, 553
- Cataractogenesis and protein disulfide formation, role of glycosylation in, 9
- in some tropical countries, a possible factor in; carbamylation of lens proteins, 567
- Cataractous and normal mouse lenses, fine structure of lentoid bodies derived from, 535
- Cataracts, cortical and nuclear, selected, human, sulfur oxidation in, 361
- , experimental, induced by ionophores, studies on; in vitro effects of nigericin and valinomycin on the lenses in mice, 543
- , selenium induced, histological evaluation of, 327
- , senile, human, classification by nuclear colour and sodium content, 227
- Catecholaminergic cells in the carp retina, spatial density of, 711
- Catecholamines and their inhibitors, influence on the solubilized adenylate cyclase activity of bovine retina, 659
- Cell areas, distribution in normal and transplanted corneas, 623
- , culture, corneal, the inhibition by retinoic acid of the biosynthesis of proteoglycans in, 443



- Cells, catecholaminergic, in the carp retina, spatial density of, 711
- , chicken lens fiber, the cytoskeleton of; a scanning and ultrastructural analysis, 487
- , corneal endothelial and lens epithelial, the extracellular matrix and the control of proliferation of, 181
- , epithelial, lens, hamster, SV40-transformed: a novel system for the isolation of cytoskeletal messenger RNAs and their translation products, 513
- Chicken lens fiber cells, the cytoskeleton of; a scanning and ultrastructural analysis, 487
- Chloride transport, electrogenic, across toad ciliary epithelium, inhibition by prostaglandins of, 699
- Chondroitin sulfate-rich proteoglycans from bovine corneal stroma, characterization of, 57
- Ciliary body and iris, monkey, distribution of  $\beta$ -adrenergic receptors and isoproterenol-stimulated cyclic AMP formation in, 471
- epithelium, changes by foreign bodies of lysosomal enzymes in, 691
- , toad, inhibition by prostaglandins of electrogenic chloride transport across, 699
- CLARK, J. I., MENGEL, L., BAGG, A. and BENEDEK, G. B., Cortical opacity, calcium concentration and fiber membrane structure in the calf lens, 399
- CLAYTON, R. M., CUTHBERT, J., PHILLIPS, C. I., BARTHOLOMEW, R. S., STOKOE, N. L., FFYTCH, T., REID, J. MCK., DUFFY, J., SETH, J. and ALEXANDER, M., Analysis of individual cataract patients and their lenses: a progress report, 553
- CLEARY, P. E. (see OGDEN, T. E.), 381
- Cold air, inhibition of aqueous humor flow by application of, to cornea, 479
- Collagen synthesis by rabbit neural retina in vitro and in vivo, 213
- Colour, nuclear, and sodium content, classification of human senile cataracts by, 227
- Conductance and radiotracer measurements; evidence for voltage-dependent potassium channels in the amphibian lens membranes, 637
- , lens, characteristics investigated using a voltage clamp technique, the influence of external potassium ions on, 651
- Contractile protein alteration in trabecular endothelium in primary open-angle glaucoma, 721
- Cornea, inhibition of aqueous humor flow by application of cold air to, 479
- , vitamin A supply of, 201
- Corneal cell culture, the inhibition by retinoic acid of the biosynthesis of proteoglycans in, 443
- endothelial and lens epithelial cells, the extracellular matrix and the control of proliferation of, 181
- — pumping in the presence of insulin and GABA, 239
- endothelium, the protective effect of Na-hyaluronate to, 119
- epithelium in diabetic and normal rats, wound healing in, 167
- — in the immature mouse, desquamation of; a scanning and transmission microscopy study, 21
- stroma, bovine, characterization of chondroitin sulfate-rich proteoglycans from, 57
- Corneas, denuded, in diabetic rats, reepithelialization of, 611
- , keratoconus and normal, biochemical properties of, 435
- , normal and transplanted, distribution of cell areas in, 623
- Cortical cataracts and nuclear cataracts, human, selected, sulfur oxidation in, 361
- opacity, calcium concentration and fiber membrane structure in the calf lens, 399
- CROSS, S. (see SZALAY, J.), 289
- CUTHBERT, J. (see CLAYTON, R. M.), 553
- c-Wave, analysis of the response properties and light-integrating characteristics in the rabbit eye, 335
- Cyclic AMP formation, isoproterenol-stimulated, and distribution of  $\beta$ -adrenergic receptors in monkey iris and ciliary body, 471
- Cycling assay, pyridine nucleotides in ocular tissues as determined by, 601
- Cytoplasmic processes interconnect lens placode and optic vesicle during eye morphogenesis, 527
- Cytoskeletal messenger RNAs and their translation products, a novel system for the isolation of; SV40-transformed hamster lens epithelial cells, 513
- Cytoskeleton of the chicken lens fiber cells: a scanning and ultrastructural analysis, 487
- DAHL, I. M. S. and AXELSSON, I., The inhibition by retinoic acid of the biosynthesis of proteoglycans in corneal cell culture, 443
- DATILES, M. (see FUKUSHI, S.), 611
- DAVIES, P. D. (see MARCANTONIO, J. M.), 227
- DE JONG, W. W. (see DRIESSEN, H. P. C.), 243
- DE LEEUW, A. L. M. (see BOUMAN, A. A.), 495
- Defense system of the lens against oxidative damage: effect of oxidative challenge on cataract formation in glutathione peroxidase deficient-acatalasemic mice, 425
- DELAMERE, N. A., PATERSON, C. A. and HOLMES, D. L., The influence of external potassium ions upon lens conductance characteristics investigated using a voltage clamp technique, 651

- DENLINGER, J. L. and BALAZS, E. A., Replacement of the liquid vitreous with sodium hyaluronate in monkeys. I. Short-term evaluation, 81
- , —, EISNER, G. and BALAZS, E. A., Age-related changes in the vitreous and lens of rhesus monkeys (*Macaca mulatta*), 67
- , —, EL-MOFTY, A. A. M. and BALAZS, E. A., Replacement of the liquid vitreous with sodium hyaluronate in monkeys. II. Long-term evaluation, 101
- , — (see EL-MOFTY, A. A. M.), 147
- Density, spatial, of catecholaminergic cells in the carp retina, 711
- DESART, D. J. (see SHEARER, T. R.), 327
- Desquamation of the corneal epithelium in the immature mouse: a scanning and transmission microscopy study, 21
- Diabetic and normal rats, wound healing in the corneal epithelium in, 167
- DIKSTEIN, S., NEUWIRTH, O. and VIDAL, R., Corneal endothelial pumping in the presence of insulin and GABA, 239
- DILLON, J. and SPECTOR, A. A., Comparison of aerobic and anerobic photolysis of lens protein, 591
- DNA replication in lens vesicles of *Ambystoma maculatum* embryos implanted into ocular or extra-ocular sites of host larvae, 451
- DODEMONT, H. (see BLOEMENDAL, H.), 513
- DRIESSEN, H. P. C., HERBRINK, P., BLOEMENDAL, H. and DE JONG, W. W., The  $\beta$ -crystallin Bp chain is internally duplicated and homologous with  $\gamma$ -crystallin, 243
- DUFFY, J. (see CLAYTON, R. M.), 553
- DUNCAN, G. (see JACOB, T. J. C.), 505
- ; — (see MARCANTONIO, J. M.), 227
- , — (see PATMORE, L.), 637
- DUNIA, I. (see BLOEMENDAL, H.), 513
- Dystrophy, retinal, inherited, protein synthesis in retinas of rats with, 251
- EISNER, G. (see EL-MOFTY, A. A. M.), 147
- Electrogenic chloride transport across toad ciliary epithelium, inhibition by prostaglandins of, 699
- EL-MOFTY, A. A. M., EISNER, G., BALAZS, E. A., DENLINGER, J. L. and GOURAS, P., Retinal degeneration in rhesus monkeys, *Macaca mulatta*. Survey of three seminatural free-breeding colonies, 147
- EL-MOFTY, A. A. M. (see DENLINGER, J. L.), 101
- Endothelial, corneal, and lens epithelial cells, the extracellular matrix and the control of proliferation of, 181
- , —, pumping in the presence of insulin and GABA, 239
- , —, the protective effect of Na-hyaluronate to, 119
- , trabecular, in primary open-angle glaucoma, contractile protein alteration in, 721
- Enzyme activities of lenticular tissue of rats, effect of hyperglycemia on, 463
- molecules, inactive, in the aging lens, immunologic detection of, 573
- Enzymes, lysosomal, in the ciliary epithelium, changes of, by foreign bodies, 691
- Epithelial cells, lens, hamster, SV40-transformed: a novel system for the isolation of cytoskeletal messenger RNAs and their translation products, 513
- , lens, and corneal endothelial cells, the extracellular matrix and the control of proliferation of, 181
- , ciliary, changes by foreign bodies of lysosomal enzymes in, 691
- , —, toad, inhibition by prostaglandins of electrogenic chloride transport across, 699
- , corneal, in the immature mouse, desquamation of; a scanning and transmission microscopy study, 21
- , —, in diabetic and normal rats, wound healing in, 167
- , retinal pigment,  $\text{Na}^+ - \text{K}^+$  ATPase, frog, localization of, 351
- ERG, primate, the use of non-linear analysis of, to detect retinal dysfunction, 381
- Explants, vascular, retinal, pure, isolation from human cadaver eyes, 247
- Eye lens obsolescence *Elo* of the mouse, impaired development of lens fibers in genetic microphthalmia, 673
- morphogenesis, cytoplasmic processes interconnect lens placode and optic vesicle during, 527
- , rabbit, analysis of the response properties and light-integrating characteristics of the c-wave in, 335
- Eyes, cadaver, human, isolation of pure retinal vascular explants from, 247
- FENDER, D. F. (see OGDEN, T. E.), 381
- FFYTCH, T. (see CLAYTON, R. M.), 553
- Fiber cells, lens, chicken, the cytoskeleton of; a scanning and ultrastructural analysis, 487
- membrane structure, calcium concentration and cortical opacity in the calf lens, 399
- membranes, lens, bovine, age-related changes in polypeptide composition of, 495
- Fibers, lens, impaired development in genetic microphthalmia, eye lens obsolescence *Elo* of the mouse, 673



- FLIEGENSPAN, J. (see SZALAY, J.), 289
- Foreign bodies, changes of lysosomal enzymes in the ciliary epithelium by, 691
- FOWLER, S. A., Wound healing in the corneal epithelium in diabetic and normal rats, 167
- Frog retinal pigment epithelium  $\text{Na}^+ - \text{K}^+$  ATPase, localization of, 351
- FUJISAWA, H. (see ODA, S.-I.), 673
- , — (see WATANABE, K.), 683
- FUKUSHI, S., MEROLA, L. O., TANAKA, M., DATILES, M. and KINOSHITA, J. H., Reepithelialization of denuded corneas in diabetic rats, 611
- GABA and insulin, corneal endothelial pumping in the presence of, 239
- Gamma-crystallin, the beta-crystallin Bp chain is internally duplicated and homologous with, 243
- GARNER, M. H. and SPECTOR, A., Sulfur oxidation in selected human cortical cataracts and nuclear cataracts, 361
- GEIJER, C. (see RASK, L.), 201
- Genetic microphthalmia, impaired development of lens fibers in; eye lens obsolescence *Elo* of the mouse, 673
- Genetically malformed lens, organ culture and immunohistochemistry of, in eye lens obsolescence, *Elo* of the mouse, 683
- GIBLIN, F. J. and REDDY, V. N., Pyridine nucleotides in ocular tissues as determined by the cycling assay, 601
- Glaucoma, primary open-angle, contractile protein alteration in trabecular endothelium in, 721
- Glutathione peroxidase deficient-acatalasemic mice, effect of oxidative challenge on cataract formation in; defense system of the lens against oxidative damage, 425
- Glycosylation, role in protein disulfide formation and cataractogenesis, 9
- GOSPODAROWICZ, D. and ILL, C., The extracellular matrix and the control of proliferation of corneal endothelial and lens epithelial cells, 181
- GOURAS, P. (see EL-MOFTY, A. A. M.), 147
- GRAUE, E. L., POLACK, F. M. and BALAZS, E. A., The protective effect of Na-hyaluronate to corneal endothelium, 119
- GROENEVELD, A. A. (see BLOEMENDAL, H.), 513
- Hamster lens epithelial cells, SV40-transformed: a novel system for the isolation of cytoskeletal messenger RNAs and their translation products, 513
- HARDING, J. J. and RIXON, K. C., Carbamylation of lens proteins: a possible factor in cataractogenesis in some tropical countries, 567
- HAYASAKA, S. (see MIZUNO, K.), 691
- HAYASHI, T. (see NEGISHI, K.), 711
- HAZLETT, L. D., SPANN, B., WELLS, P. and BERK, R. S., Desquamation of the corneal epithelium in the immature mouse: a scanning and transmission microscopy study, 21
- HEINEGÅRD, D. (see AXELSSON, I.), 57
- HERBRINK, P. (see DRIESSEN, H. P. C.), 243
- Histological evaluation of selenium induced cataracts, 327
- HOCKWIN, O. (see OHRLOFF, C.), 573
- HOLLYFIELD, J. G. (see MAN-KIT-LAM, D.), 729
- HOLMES, D. L. (see DELAMERE, N. A.), 651
- HORIUCHI, M. (see IWATA, S.), 543
- HORWITZ, J. (see ZIGLER, J. S., Jr.), 41
- HUANG, F. L., RUSSELL, P. and KUWABARA, T., Fine structure of lentoid bodies derived from normal and cataractous mouse lenses, 535
- Human  $\beta$ -crystallin, analysis of some immunochemical properties of, by radioimmunoassay, 389
- , —, I. Comparative studies on the  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ -crystallins, 41
- , cadaver eyes, isolation of pure retinal vascular explants from, 247
- , cortical cataracts and nuclear cataracts, selected, sulfur oxidation in, 361
- , retina, localization of putative amino acid neurotransmitters in, 729
- , senile cataracts, classification by nuclear colour and sodium content, 227
- Hyaloid arteriole in bovine vitreous, the fine structure of, 129
- Hyperglycemia, effect on the enzyme activities of lenticular tissue of rats, 463
- ILL, C. (see GOSPODAROWICZ, D.), 181
- Immunochemical properties of human  $\beta$ -crystallin, analysis by radioimmunoassay, 389
- Immunohistochemistry and organ culture of the genetically malformed lens, in eye lens obsolescence, *Elo* of the mouse, 683
- Immunologic detection of inactive enzyme molecules in the aging lens, 573





- Lens, placode and optic vesicle are interconnected by cytoplasmic processes during eye morphogenesis, 527
- protein, a comparison of aerobic and anaerobic photolysis of, 591
- proteins, carbamylation of; a possible factor in cataractogenesis in some tropical countries, 567
- vesicles of *Ambystoma maculatum* embryos implanted into ocular or extra-ocular sites of host larvae, DNA replication in, 451
- and vitreous of rhesus monkeys (*Macaca mulatta*), age-related changes in, 67
- Lenses, analysis of individual cataract patients and their; a progress report, 553
- in mice, in vitro effects of nigericin and valinomycin on; studies on experimental cataracts induced by ionophores, 543
- , mouse, cataractous and normal, fine structure of lentoid bodies derived from, 535
- LENSTRA, J. A. (see BLOEMENDAL, H.), 513
- Lenticular tissue of rats, effect of hyperglycemia on the enzyme activities of, 463
- Lentoid bodies derived from normal and cataractous mouse lenses, fine structure of, 535
- LENTRICHIA, B. B., PLANTNER, J. J. and KEAN, E. L., Radioimmunoassay for rhodopsin, 1
- Light-integrating characteristics and response properties of the c-wave in the rabbit eye, analysis of, 335
- LO, W.-K. (see BRADLEY, R. H.), 487
- LOPEZ, M. T. (see SHEARER, T. R.), 327
- LURIE, M. and MARMOR, M. F., Analysis of the response properties and light-integrating characteristics of the c-wave in the rabbit eye, 335
- Lysosomal enzymes in the ciliary epithelium, changes of, by foreign bodies, 691
- Macaca mulatta* (rhesus monkey), age-related changes in the vitreous and lens of, 67
- — — — —, retinal degeneration in; survey of three seminatural free-breeding colonies, 147
- MCAVOY, J. W., Cytoplasmic processes interconnect lens placode and optic vesicle during eye morphogenesis, 527
- McCORMACK, D. W. (see SHEARER, T. R.), 327
- Magnesium metabolism of the amphibian lens, some observations on, 665
- MAISEL, H. (see BRADLEY, R. H.), 487
- MAKMAN, M. H. (see BHARGAVA, G.), 471
- MALINOWSKI, K. (see MANSKI, W.), 581
- MAN-KIT-LAM, D. and HOLLYFIELD, J. G., Localization of putative amino acid neurotransmitters in the human retina, 729
- MANSKI, W. and MALINOWSKI, K., Comparison of  $\alpha$ -crystallin A and B chains in their dissociated and associated states, 581
- MARCANTONIO, J. M., DUNCAN, G., DAVIES, P. D. and BUSHELL, A. R., Classification of human senile cataracts by nuclear colour and sodium content, 227
- MARMOR, M. F. (see LURIE, M.), 335
- Matrix, extracellular, and the control of proliferation of corneal endothelial and lens epithelial cells, 181
- MAURICE, D. M., Inhibition of aqueous humor flow by application of cold air to cornea, 479
- Membrane structure, fiber, calcium concentration and cortical opacity in the calf lens, 399
- Membranes, fiber, lens, bovine, age-related changes in polypeptide composition of, 495
- , lens, amphibian, voltage-dependent potassium channels in; evidence from radiotracer and electrical conductance measurements, 637
- , —, osmotic influences on characteristics of, 505
- MENGEL, L. (see CLARK, J. I.), 399
- MEROLA, L. O. (see FUKUSHI, S.), 611
- Messenger RNAs, cytoskeletal, and their translation products, a novel system for the isolation of; SV40-transformed hamster lens epithelial cells, 513
- Mice, glutathione peroxidase deficient-acatalasemic, effect of oxidative challenge on cataract formation in; defense system of the lens against oxidative damage, 425
- lenses, in vitro effects of nigericin and valinomycin on; studies on experimental cataracts induced by ionophores, 543
- MIZUNO, K. and HYASAKA, S., Changes of lysosomal enzymes in the ciliary epithelium by foreign bodies, 691
- Monkey iris and ciliary body, distribution of  $\beta$ -adrenergic receptors and isoproterenol-stimulated cyclic AMP formation in, 471
- Monkeys, replacement of the liquid vitreous with sodium hyaluronate in; long-term evaluation, 101
- , —, —, —, —, short-term evaluation, 81
- , rhesus (*Macaca mulatta*), age-related changes in the vitreous and lens of, 67
- Morphogenesis, eye, cytoplasmic processes interconnect lens placode and optic vesicle during, 527
- Morphological modifications of blood vessel walls of the rat iris due to beta adrenergic agents, 299

- Mouse, immature, desquamation of the corneal epithelium in; a scanning and transmission microscopy study of, 21
- , impaired development of lens fibers in genetic microphthalmia, eye lens obsolescence *Elo* of, 673
- , organ culture and immunohistochemistry of the genetically malformed lens, in eye lens obsolescence, *Elo* of, 683
- lenses, cataractous and normal, fine structure of lentoid bodies derived from, 535
- $\text{Na}^+$  and  $\text{K}^+$  effects; high-affinity uptake of [ $^3\text{H}$ ]taurine in isolated cat retinas, 373
- $\text{K}^+$  ATPase of frog retinal pigment epithelium, localization of, 351
- NAKAMURA, T. (see NEGISHI, K.), 711
- NEGISHI, K., NAKAMURA, T. and HAYASHI, T., Spatial density of catecholaminergic cells in the carp retina, 711
- Neurotransmitters, amino acid, putative, localization in the human retina, 729
- NEUWIRTH, O. (see DIKSTEIN, S.), 239
- Nigericin and valinomycin, in vitro effects on the lenses in mice; studies on experimental cataracts induced by ionophores, 543
- Nuclear cataracts and cortical cataracts, human, selected, sulfur oxidation in, 361
- ODA, S.-I., WATANABE, K., FUJISAWA, H. and KAMEYAMA, Y., Impaired development of lens fibers in genetic microphthalmia, eye lens obsolescence *Elo* of the mouse, 673
- ODA, S.-I. (see WATANABE, K.), 683
- ODGEN, T. E., LARKIN, R. M., FENDER, D. F., CLEARY, P. E. and RYAN, S. J., The use of non-linear analysis of the primate ERG to detect retinal dysfunction, 381
- OHRLOFF, C., BENSCH, J., JAEGER, M. and HOCKWIN, O., Immunologic detection of inactive enzyme molecules in the aging lens, 573
- Optic vesicle and lens placode are interconnected by cytoplasmic processes during eye morphogenesis, 527
- ORTWERTH, B. J. (see TSE, S. S.), 313, 411
- OSBORNE, N. N. and RICHARDSON, G., Specificity of serotonin uptake by bovine retina: comparison with tryptamine, 31
- Osmotic influences on lens membrane characteristics, 505
- OSTROY, S. E. (see KIMBLE, E. A.), 271
- OSTWALD, T. J. and STEINBERG, R. H., Localization of frog retinal pigment epithelium  $\text{Na}^+-\text{K}^+$  ATPase, 351
- Oxidation, sulfur, in selected human cortical cataracts and nuclear cataracts, 361
- Oxidative damage, defense system of the lens against; effect of oxidative challenge on cataract formation in glutathione peroxidase deficient-acatalasemic mice, 425
- OXLUND, H. (see ANDREASSEN, T. T.), 435
- Oxygen consumption and ATP changes of the vertebrate photoreceptor, 271
- transport in the bullfrog retina, 725
- — — — —; a reply, 727
- OZANICS, V. (see BLOOM, G. D.), 129
- PATERSON, C. A. (see DELAMERE, N. A.), 651
- PATMORE, L. and DUNCAN, G., Voltage-dependent potassium channels in the amphibian lens membranes: evidence from radiotracer and electrical conductance measurements, 637
- Permeability to carbon particles of blood vessels of the rat iris; effect of beta adrenergic agents, 289
- PETERSON, P. A. (see RASK, L.), 201
- PHILLIPS, C. I. (see CLAYTON, R. M.), 553
- Photolysis, aerobic and anaerobic, of lens protein, a comparison, 591
- Photoreceptor, vertebrate, oxygen consumption and ATP changes of, 271
- Pigment epithelium, retinal, frog,  $\text{Na}^+-\text{K}^+$  ATPase, localization of, 351
- Placode, lens, and optic vesicle are interconnected by cytoplasmic processes during eye morphogenesis, 527
- PLANTNER, J. J. (see LENTRICHIA, B. B.), 1
- POITRY, S. (see TSACOPOULOS, M.), 725
- POLACK, F. M. (see GRAUE, E. L.), 119
- Polypeptide composition of bovine lens fiber membranes, age-related changes in, 495
- Potassium channels, voltage-dependent, in the amphibian lens membranes: evidence from radiotracer and electrical conductance measurements, 637
- ions, external, influence upon lens conductance characteristics investigated using a voltage clamp technique, 651
- Primate ERG, the use of non-linear analysis of, to detect retinal dysfunction, 381
- Prostaglandins, inhibition of electrogenic chloride transport across toad ciliary epithelium by, 699



- Protein contractile alteration in trabecular endothelium in primary open-angle glaucoma, 721  
 — disulfide formation and cataractogenesis, role of glycosylation in, 9  
 —, lens, a comparison of aerobic and anerobic photolysis of, 591  
 — synthesis in retinas of rats with inherited retinal dystrophy, 251
- Proteins, lens, carbamylation of; a possible factor in cataractogenesis in some tropical countries, 567  
 —, trypsin inhibitor, distribution in bovine lens; a possible factor in preventing in vivo proteolysis, 411
- Proteoglycans, chondroitin sulfate-rich, from bovine corneal stroma, characterization of, 57  
 —, the inhibition by retinoic acid of the biosynthesis of, in corneal cell culture, 443
- Proteolysis, in vivo, a possible factor in the prevention of; the distribution of trypsin inhibitor proteins in bovine lens, 411
- Pumping, corneal, endothelial, in the presence of insulin and GABA, 239
- Pyridine nucleotides in ocular tissues as determined by the cycling assay, 601
- Rabbit eye, analysis of the response properties and light-integrating characteristics of the c-wave in, 335  
 — neural retina, collagen synthesis by, in vitro and in vivo, 213
- Radioimmunoassay, analysis of some immunochemical properties of human  $\beta$ -crystallin by, 389  
 — for rhodopsin, 1
- RAHMAN, M. A. (see SIDDIQUI, M. A.), 463
- RAMAEKERS, E. C. S. (see BLOEMENDAL, H.), 513
- RASK, L., GEIJER, C., BILL, A. and PETERSON, P. A., Vitamin A supply of the cornea, 201
- Rat iris, effect of beta adrenergic agents on blood vessels of; morphological modifications of the vessel wall, 299  
 — — — — —; permeability to carbon particles, 289  
 — retinas with inherited retinal dystrophy, protein synthesis in, 251
- Rats, diabetic, reepithelialization of denuded corneas in, 611  
 —, — and normal, wound healing in the corneal epithelium in, 167  
 —, effect of hyperglycemia on the enzyme activities of lenticular tissue of, 463
- REDDY, V. N. (see GIBLIN, F. J.), 601
- Reepithelialization of denuded corneas in diabetic rats, 611
- REID, J. McK. (see CLAYTON, R. M.), 553
- Retina, bovine, the effects of catecholamines and of their inhibitors on the solubilized adenylate cyclase activity of, 659  
 —, —, specificity of serotonin uptake by; comparison with tryptamine, 31  
 —, bullfrog, oxygen transport in, 725  
 —, —, — — — — —; a reply, 727  
 —, carp, catecholaminergic cell spatial density in, 711  
 —, human, localization of putative amino acid neurotransmitters in, 729  
 —, neural, rabbit, collagen synthesis by, in vitro and in vivo, 213
- Retinal degeneration in rhesus monkeys, *Macaca mulatta*, Survey of three seminatural free-breeding colonies, 147  
 — dysfunction, the use of non-linear analysis of the primate ERG to detect, 381  
 — pigment epithelium  $\text{Na}^+$ - $\text{K}^+$  ATPase, frog, localization of, 351  
 — vascular explants, pure, isolation from human cadaver eyes, 247
- Retinas, cat, isolated, high-affinity uptake of [ $^3\text{H}$ ]taurine in; effects of  $\text{Na}^+$  and  $\text{K}^+$ , 373  
 — of rats with inherited retinal dystrophy, protein synthesis in, 251
- Retinoic acid inhibition of the biosynthesis of proteoglycans in corneal cell culture, 443
- REYER, R. W., DNA replication in lens vesicles of *Ambystoma maculatum* embryos implanted into ocular or extra-ocular sites of host larvae, 451
- Rhesus monkeys, *Macaca mulatta*, retinal degeneration in; survey of three seminatural free-breeding colonies, 147
- Rhodopsin, radioimmunoassay for, 1
- RICHARDSON, G. (see OSBORNE, N. N.), 31
- RIXON, K. C. (see HARDING, J. J.), 567
- RUSSELL, P. (see HUANG, F. L.), 535
- RUSSELL, P. (see ZIGLER, J. S., Jr.), 389
- RYAN, S. J. (see OGDEN, T. E.), 381
- SAITO, Y. and WATANABE, T., Inhibition by prostaglandins of electrogenic chloride transport across toad ciliary epithelium, 699
- Scanning and transmission microscopy study of desquamation of the corneal epithelium in the immature mouse, 21  
 — and ultrastructural study of the cytoskeleton of chicken lens fiber cells, 487





- Vitreous, bovine, the fine structure of the hyaloid arteriole in, 129
- Vitreous and lens of rhesus monkeys (*Macaca mulatta*), age-related changes in, 67
- , liquid, replacement with sodium hyaluronate in monkeys. I. Short-term evaluation, 81
- , ———, ———, ———, ———. II. Long-term evaluation, 101
- Voltage clamp technique, the influence of external potassium ions upon lens conductance characteristics investigated using, 651
- dependent potassium channels in the amphibian lens membranes: evidence from radiotracer and electrical conductance measurements, 637
- WATANABE, K., FUJISAWA, H., ODA, S-I. and KAMEYAMA, Y., Organ culture and immunohistochemistry of the genetically malformed lens, in eyes lens obsolescence, *Elo* of the mouse, 683
- , ——— (see ODA, S-I.), 673
- WATANABE, T. (see SAITO, Y.), 699
- WEALE, R. A., On the birefringence of the lens - a reply from Professor R. A. Weale, 483
- WEITER, J. J. (see ZUCKERMAN, R.), 727
- WELLS, P. (see HAZLETT, L. D.), 21
- WOLLEMAN, M. (see JOÓ, I.), 659
- Wound healing in the corneal epithelium in diabetic and normal rats, 167
- ZAAGER, A. (see SZALAY, J.), 289
- ZIGLER, J. S., JR., CARPER, D., RUSSELL, P. and KINOSHITA, J. H., Analysis of some immunochemical properties of human  $\beta$ -crystallin by radioimmunoassay, 389
- , ———, ———, HORWITZ, J. and KINOSHITA, J. H., Human  $\beta$ -crystallin. I. Comparative studies on the  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ -crystallins, 41
- ZUCKERMAN, R. and WEITER, J. J., Oxygen transport in the bullfrog retina - a reply, 727





## AUTHOR INDEX

- ALEXANDER, M. (see CLAYTON, R. M.), 553
- ANDREASSEN, T. T., SIMONSEN, A. H. and OXLUND, H., Biomechanical properties of keratoconus and normal corneas, 435
- ANSARI, N. H., AWASTHI, Y. C. and SRIVASTAVA, S. K., Role of glycosylation in protein disulfide formation and cataractogenesis, 9
- , — (see SRIVASTAVA, S. K.), 425
- AWASTHI, Y. C. (see ANSARI, N. H.), 9
- AXELSSON, I. and HEINEGÅRD, D., Characterization of chondroitin sulfate-rich proteoglycans from bovine corneal stroma, 57
- , — (see DAHL, I. M. S.), 443
- BAGG, A. (see CLARK, J. I.), 399
- BALAZS, E. A. (see BLOOM, G. D.), 129
- , — (see DENLINGER, J. L.), 67, 81, 101
- , — (see EL-MOFTY, A. A. M.), 147
- , — (see GRAUE, E. L.), 119
- BALDWIN, G. F. and BENTLEY, P. J., Some observations on the magnesium metabolism of the amphibian lens, 665
- BARTHOLOMEW, R. S. (see CLAYTON, R. M.), 553
- BATTELLE, B.-A. and LA VAIL, M. M., Protein synthesis in retinas of rats with inherited retinal dystrophy, 251
- BENEDEK, G. B. (see CLARK, J. I.), 399
- BENEDETTI, E. L. (see BLOEMENDAL, H.), 513
- BENSCH, J. (see OHRLOFF, C.), 573
- BENTLEY, P. J. (see BALDWIN, G. F.), 665
- BERK, R. S. (see HAZLETT, L. D.), 21
- BERRY, C. C., BINDER, P. S. and KAHN, M., Distribution of cell areas in normal and transplanted corneas, 623
- BETTELHEIM, F. A., On the birefringence of the lens, 481
- BHARGAVA, G., MAKMAN, M. H. and KATZMAN, R., Distribution of  $\beta$ -adrenergic receptors and isoproterenol-stimulated cyclic AMP formation in monkey iris and ciliary body, 471
- BILL, A. (see RASK, L.), 201
- BINDER, P. S. (see BERRY, C. C.), 623
- BLOEMENDAL, H., LENSTRA, J. A., DODEMONT, H., RAMAEKERS, F. C. S., GROENEVELD, A. A., DUNIA, I. and BENEDETTI, E. L., SV40-transformed hamster lens epithelial cells: a novel system for the isolation of cytoskeletal messenger RNAs and their translation products, 513
- , — (see DRIESSEN, H. P. C.), 243
- BLOOM, G. D., BALAZS, E. A. and OZANICS, V., The fine structure of the hyaloid arteriole in bovine vitreous, 129
- BOUMAN, A. A., DE LEEUW, A. L. M. and BROEKHUYSE, R. M., Lens membranes. XII. Age-related changes in polypeptide composition of bovine lens fiber membranes, 495
- BRADLEY, R. H., LO, W.-K., KUSZAK, J. and MAISEL, H., The cytoskeleton of the chicken lens fiber cells: a scanning and ultrastructural analysis, 487
- BRITTON, J. L. (see SHEARER, T. R.), 327
- BROEKHUYSE, R. M. (see BOUMAN, A. A.), 495
- BURKE, J. M. and KOWER, H. S., Collagen synthesis by rabbit neural retina in vitro and in vivo, 213
- BUSHELL, A. R. (see MARCANTONIO, J. M.), 227
- CARPER, D. (see ZIGLER, J. S., JR.), 389
- CLARK, J. I., MENGEL, L., BAGG, A. and BENEDEK, G. B., Cortical opacity, calcium concentration and fiber membrane structure in the calf lens, 399
- CLAYTON, R. M., CUTHBERT, J., PHILLIPS, C. I., BARTHOLOMEW, R. S., STOKOE, N. L., FFYTCH, T., REID, J. McK., DUFFY, J., SETH, J. and ALEXANDER, M., Analysis of individual cataract patients and their lenses: a progress report, 533
- CLEARY, P. E. (see OGDEN, T. E.), 381
- CROSS, S. (see SZALAY, J.), 289
- CUTHBERT, J. (see CLAYTON, R. M.), 553

# INDEX

- DAHL, I. M. S. and AXELSSON, I., The inhibition by retinoic acid of the biosynthesis of proteoglycans in corneal cell cultures, 443
- DATILES, M. (see FUKUSHI, S.), 611
- DAVIES, P. D. (see MARCANTONIO, J. M.), 227
- DE JONG, W. W. (see DRIESSEN, H. P. C.), 243
- DE LEEUW, A. L. M. (see BOUMAN, A. A.), 495
- DELAMERE, N. A., PATERSON, C. A. and HOLMES, D. L., The influence of external potassium ions upon lens conductance characteristics investigated using a voltage clamp technique, 651
- DENLINGER, J. L. and BALAZS, E. A., Replacement of the liquid vitreous with sodium hyaluronate in monkeys. I. Short-term evaluation, 81
- , —, EISNER, G. and BALAZS, E. A., Age-related changes in the vitreous and lens of rhesus monkeys (*Macaca mulatta*), 67
- , —, EL-MOFTY, A. A. M. and BALAZS, E. A., Replacement of the liquid vitreous with sodium hyaluronate in monkeys. II. Long-term evaluation, 101
- , —, (see EL-MOFTY, A. A. M.), 147
- DESART, D. J. (see SHEARER, T. R.), 327
- DIKSTEIN, S., NEUWIRTH, O. and VIDAL, R., Corneal endothelial pumping in the presence of insulin and GABA, 239
- DILLON, J. and SPECTOR, A., A comparison of aerobic and anerobic photolysis of lens protein, 591
- DODEMONT, H. (see BLOEMENDAL, H.), 513
- DRIESSEN, H. P. C., HERBRINK, P., BLOEMENDAL, H. and DE JONG, W. W., The  $\beta$ -crystallin Bp chain is internally duplicated and homologous with  $\gamma$ -crystallin, 243
- DUFFY, J. (see CLAYTON, R. M.), 553
- DUNCAN, G. (see JACOB, T. J. C.), 505
- , —, (see MARCANTONIO, J. M.), 227
- , —, (see PATMORE, L.), 637
- DUNIA, I. (see BLOEMENDAL, H.), 513
- EISNER, G. (see DENLINGER, J. L.), 67
- , —, (see EL-MOFTY, A. A. M.), 147
- EL-MOFTY, A. A. M., EISNER, G., BALAZS, E. A., DENLINGER, J. L. and GOURAS, P., Retinal degeneration in rhesus monkeys, *Macaca mulatta*. Survey of three seminatural free-breeding colonies, 147
- , —, (see DENLINGER, J. L.), 101
- FENDER, D. F. (see OGDEN, T. E.), 381
- FFYTCH, T. (see CLAYTON, R. M.), 553
- FLIEGENSPAN, J. (see SZALAY, J.), 289
- FOWLER, S. A., Wound healing in the corneal epithelium in diabetic and normal rats, 167
- FUJISAWA, H. (see ODA, S.-I.), 673
- , —, (see WATANABE, K.), 683
- FUKUSHI, S., MEROLA, L. O., TANAKA, M., DATILES, M. and KINOSHITA, J. H., Reepithelialization of denuded corneas in diabetic rats, 611
- GARNER, M. H. and SPECTOR, A., Sulfur oxidation in selected human cortical cataracts and nuclear cataracts, 361
- GEIJER, C. (see RASK, L.), 201
- GIBLIN, F. J. and REDDY, V. N., Pyridine nucleotides in ocular tissues as determined by the cycling assay, 601
- GOSPODAROWICZ, D. and ILL, C., The extracellular matrix and the control of proliferation of corneal endothelial and lens epithelial cells, 181
- GOURAS, P. (see EL-MOFTY, A. A. M.), 147
- GRAUE, E. L., POLACK, F. M. and BALAZS, E. A., The protective effect of Na-hyaluronate to corneal endothelium, 119
- GROENEVELD, A. A. (see BLOEMENDAL, H.), 513
- HARDING, J. J. and RIXON, K. C., Carbamylation of lens proteins: a possible factor in cataractogenesis in some tropical countries, 567
- HAYASAKA, S. (see MUZUNO, K.), 691
- HAYASHI, T. (see NEGISHI, K.), 711
- HAZLETT, L. D., SPANN, B., WELLS, P. and BERK, R. S., Desquamation of the corneal epithelium in the immature mouse: a scanning and transmission microscopy study, 21
- HEINEGÅRD, D. (see AXELSSON, I.), 57
- HERBRINK, P. (see DRIESSEN, H. P. C.), 243
- HOCKWIN, O. (see OHRLOFF, C.), 573
- HOLLYFIELD, J. G. (see LAM, M.-K.), 729



# INDEX

- HOLMES, D. L. (see DELAMERE, N. A.), 651
- HORIUCHI, M. (see IWATA, S.), 543
- HORWITZ, J. (see ZIGLER, J. S., JR.), 41
- HUANG, F. L., RUSSELL, P. and KUWABARA, T., Fine structure of lentoid bodies derived from normal and cataractous mouse lenses, 535
- ILL, C. (see GOSPODAROWICZ, D.), 181
- IWATA, S. and HORIUCHI, M., Studies on experimental cataracts induced by ionophores: in vitro effects of nigericin and valinomycin on the lenses in mice, 543
- JACOB, T. J. C. and DUNCAN, G., Osmotic influences on lens membrane characteristics, 505
- JAEGER, M. (see OHRLOFF, C.), 573
- Joó, I. and WOLLEMAN, M., The effect of catecholamines and of their inhibitors on the solubilized adenylate cyclase activity of bovine retina, 659
- KAHN, M. (see BERRY, C. C.), 623
- KAMEYAMA, Y. (see ODA, S.-I.), 673
- , — (see WATANABE, K.), 683
- KATZMAN, R. (see BHARGAVA, G.), 471
- KEAN, E. L. (see LENTRICHIA, B. B.), 1
- KIMBLE, E. A., SVOBODA, R. A. and OSTROY, S. E., Oxygen consumption and ATP changes of the vertebrate photoreceptor, 271
- KINOSHITA, J. H. (see FUKUSHI, S.), 611
- , — (see ZIGLER, J. S., JR.), 41, 389
- KOWER, H. S. (see BURKE, J. M.), 213
- KUSZAK, J. (see BRADLEY, R. H.), 487
- KUWABARA, T. (see HUANG, F. L.), 535
- LA VAIL, M. M. (see BATTELLE, B.-A.), 251
- LAL, A. K. (see SRIVASTAVA, S. K.), 425
- LAM, D. M.-K. and HOLLYFIELD, J. G., Localization of putative amino acid neurotransmitters in the human retina, 729
- LARKIN, R. M. (see OGDEN, T. E.), 381
- LENSTRA, J. A. (see BLOEMENDAL, H.), 513
- LENTRICHIA, B. B., PLANTNER, J. J. and KEAN, E. L., Radioimmunoassay for rhodopsin, 1
- LO, W.-K. (see BRADLEY, R. H.), 487
- LOPEZ, M. T. (see SHEARER, T. R.), 327
- LURIE, M. and MARMOR, M. F., Analysis of the response properties and light-integrating characteristics of the c-wave in the rabbit eye, 335
- MAISEL, H. (see BRADLEY, R. H.), 487
- MAKMAN, M. H. (see BHARGAVA, G.), 471
- MALINOWSKI, K. (see MANSKI, W.), 581
- MANSKI, W. and MALINOWSKI, K., Comparison of  $\alpha$ -crystallin A and B chains in their dissociated and associated states, 581
- MARCANTONIO, J. M., DUNCAN, G., DAVIES, P. D. and BUSHELL, A. R., Classification of human senile cataracts by nuclear colour and sodium content, 227
- MARMOR, M. F. (see LURIE, M.), 335
- MAURICE, D. M., Inhibition of aqueous humor flow by application of cold air to cornea, 479
- McAVOY, J. W., Cytoplasmic processes interconnect lens placode and optic vesicles during eye morphogenesis, 527
- MCCORMACK, D. W. (see SHEARER, T. R.), 327
- MENGEL, L. (see CLARK, J. I.), 399
- MEROLA, L. O. (see FUKUSHI, S.), 611
- MIZUNO, K. and HAYASAKA, S., Changes of lysosomal enzymes in the ciliary epithelium by foreign bodies, 691
- NEGISHI, K., NAKAMURA, T. and HAYASHI, T., Spatial density of catecholaminergic cells in the carp retina, 711
- NAKAMURA, T. (see NEGISHI, K.), 711
- NEUWIRTH, O. (see DIKSTEIN, S.), 239
- ODA, S.-I., WATANABE, K., FUJISAWA, H. and KAMEYAMA, Y., Impaired development of lens fibers in genetic microphthalmia, eye lens obsolescence, *Elo*, of the mouse, 673
- , — (see WATANABE, K.), 683

# INDEX

- OGDEN, T. E., LARKIN, R. M., FENDER, D. F., CLEARY, P. E. and RYAN, S. J., The use of non-linear analysis of the primate ERG to detect retinal dysfunction, 381
- OHRLOFF, C., BENSCH, J., JAEGER, M. and HOCKWIN, O., Immunologic detection of inactive enzyme molecules in the aging lens, 573
- ORTWERTH, B. J. (see TSE, S. S.), 313, 411
- OSBORNE, N. N. and RICHARDSON, G., Specificity of serotonin uptake by bovine retina: comparison with tryptamine, 31
- OSTROY, S. E. (see KIMBLE, E. A.), 271
- OSTWALD, T. J. and STEINBERG, R. H., Localization of frog retinal pigment epithelium  $\text{Na}^+\text{-K}^+$  ATPase, 351
- OXLUND, H. (see ANDREASSEN, T. T.), 435
- OZANICS, V. (see BLOOM, G. D.), 129
- PATERSON, C. A. (see DELAMERE, N. A.), 651
- PATMORE, L. and DUNCAN, G., Voltage-dependent potassium channels in the amphibian lens membranes: evidence from radiotracer and electrical conductance measurements, 637
- PETERSON, P. A. (see RASK, L.), 201
- PHILLIPS, C. I. (see CLAYTON, R. M.), 553
- PLANTNER, J. J. (see LENTRICHIA, B. B.), 1
- POITRY, S. (see TSACOPOULOS, M.), 725
- POLACK, F. M. (see GRAUE, E. L.), 119
- RAHMAN, M. A. (see SIDDIQUI, M. A.), 463
- RAMAEKERS, F. C. S. (see BLOEMENDAL, H.), 513
- RASK, L., GEIJER, C., BILL, A. and PETERSON, P. A., Vitamin A supply to the cornea, 201
- REDDY, V. N. (see GIBLIN, F. J.), 601
- REID, J. MCK. (see CLAYTON, R. M.), 553
- REYER, R. W., DNA replication in lens vesicles of *Ambystoma maculatum* embryos implanted into ocular or extra-ocular sites of host larvae, 451
- RICHARDSON, G. (see OSBORNE, N. N.), 31
- RIXON, K. C. (see HARDING, J. J.), 567
- RUSSELL, P. (see HUANG, F. L.), 535
- RUSSELL, P. (see ZIGLER, J. S., JR.), 389
- RYAN, S. J. (see OGDEN, T. E.), 381
- SAITO, Y. and WATANABE, T., Inhibition by prostaglandins of electrogenic chloride transport across ciliary epithelium, 699
- SCHMIDT, S. Y., High-affinity uptake of [ $^3\text{H}$ ]taurine in isolated cat retinas: effects of  $\text{Na}^+$  and  $\text{K}^+$ , 373
- SETH, J. (see CLAYTON, R. M.), 553
- SHEARER, T. R., McCORMACK, D. W., DESART, D. J., BRITTON, J. L. and LOPEZ, M. T., Histological evaluation of selenium induced cataracts, 327
- SIDDIQUI, M. A. and RAHMAN, M. A., Effect of hyperglycemia on the enzyme activities of lenticular tissue of rats, 463
- SIMONSEN, A. H. (see ANDREASSEN, T. T.), 435
- SPANN, B. (see HAZLETT, L. D.), 21
- SPECTOR, A. (see DILLON, J.), 591
- , — (see GARNER, M. H.), 361
- SRIVASTAVA, S. K., LAL, A. K. and ANSARI, N. H., Defense system of the lens against oxidative damage: effect of oxidative challenge on cataract formation in glutathione peroxidase deficient-acatalasemic mice, 425
- , — (see ANSARI, N. H.), 9
- STEINBERG, R. H. (see OSTWALD, T. J.), 351
- STOKOE, N. L. (see CLAYTON, R. M.), 553
- SVOBODA, R. A. (see KIMBLE, E. A.), 271
- SZALAY, J., Effect of beta adrenergic agents on blood vessels of the rat iris. II. Morphological modifications of the vessel wall, 299
- , — FLIEGENSPAN, J., ZAAGER, A., TOBIN, G. and CROSS, S., Effect of beta adrenergic agents on blood vessels of the rat iris. I. Permeability to carbon particles, 289
- TANAKA, M. (see FUKUSHI, S.), 611
- TOBIN, G. (see SZALAY, J.), 289
- TRIPATHI, B. J. and TRIPATHI, R. C., Isolation of pure retinal vascular explants from human cadaver eyes, 247
- , — (see TRIPATHI, R. C.), 721

# INDEX

- TRIPATHI, R. C. and TRIPATHI, B. J., Contractile protein alteration in trabecular endothelium in primary open-angle glaucoma, 721
- , — (see TRIPATHI, B. J.), 247
- TSACOPoulos, M. and POITRY, S., Oxygen transport in the bullfrog retina, 725
- TSE, S. S. and ORTWERTH, B. J., The distribution of trypsin inhibitor proteins in bovine lens: a possible factor in preventing in vivo proteolysis, 411
- , — and ORTWERTH, B. J., Inactivation of the bovine lens trypsin inhibitor by ultraviolet irradiation, 313
- VIDAL, R. (see DIKSTEIN, S.), 239
- WATANABE, K., FUJISAWA, H., ODA, S.-I. and KAMEYAMA, Y., Organ culture and immunohistochemistry of the genetically malformed lens, in eye lens obsolescence, *Elo*, of the mouse, 683
- , — (see ODA, S.-I.), 673
- WATANABE, T. (see SAITO, Y.), 699
- WEALE, R. A., On the birefringence of the lens—a reply from Professor R. A. Weale, 483
- WEITER, J. J. (see ZUCKERMAN, R.), 727
- WELLS, P. (see HAZLETT, L. D.), 21
- WOLLEMAN, M. (see JOÓ, I.), 659
- ZAAGER, A. (see SZALAY, J.), 289
- ZIGLER, J. S., JR., CARPER, D., RUSSELL, P. and KINOSHITA, J. H., Analysis of some immunochemical properties of human  $\beta$ -crystallin by radioimmunoassay, 389
- , — HORWITZ, J. and KINOSHITA, J. H., Human  $\beta$ -crystallin, I. Comparative studies on the  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ -crystallins, 41
- ZUCKERMAN, R. and WEITER, J. J., Oxygen transport in the bullfrog retina—a reply, 727





## SUBJECT INDEX

- Acatalasemia, 425
- Acid phosphatase, 691
- Actin, 487
- Actin filaments, 721
- Active transport, 699
- Adenylate cyclase, 659
- Aging, 21, 67, 147, 299, 495, 573
- Alcohol, 553
- Aldose reductase inhibitors, 611
- ALD-isoenzymes, 573
- Amino acid sequence, 243
- Anatomical localization, 351
- Anerobic photolysis, 591
- Antibody, 1
- Antigen, 1
- Aotus trivirgatus*, 81, 101, 147
- Aqueous humor, 201, 699
- Aqueous humor flow, 479
- Aspartic acid, 729
- Association of A and B chains, 581
- ATP, 271
- ATPase, 535
- Basement membrane, 213
- Beta-adrenergic, 471
- Beta-adrenergic agents, 299
- Beta receptor, 289
- Biomechanics, 435
- Birefringence, 481, 483
- Blood platelet, 299
- Blood pressure, 553
- Blood vessel permeability, 299
- Blood vessels, 289
- Blood-aqueous barrier, 289
- Bovine retina, 31, 659
- Bullfrog retina, 725, 727
- Bunsen-Roscoe law, 335
- Calcium, 399
- Calf lens, 581
- Carbamylation, 567
- Carp retina, 711
- Cat retina, 373
- Catalase, 425
- Cataract, 9, 227, 313, 327, 361, 399, 425, 505, 535, 543, 553, 567, 591
- Cataractogenesis, 9
- Catecholaminergic cells, 711
- Cathepsin B, 691
- Cation balance, 543
- Cell differentiation, 411
- Chicken, 487
- Chloride transport, 699
- Chondroitin sulfate, 57
- Chorioretinal lesion, 101
- Chronic simple glaucoma, 721
- Ciliary, 471
- Ciliary body, 699
- Circular dichroism, 41
- Ciliary epithelium, 691
- Cloquet's canal, 129
- Cold storage, 247
- Collagens, 181, 213, 435
- Conductance, 505, 637, 651
- Conformational analysis, 41
- Conformational changes of  $\alpha$ -crystallin subunits, 581
- Contractile protein alteration, 721
- Contractile proteins, 721
- Cornea, 21, 57, 119, 167, 201, 239, 435, 443, 479
- Corneal endothelium, 119, 623
- Corneal epithelium, 601, 611
- Cortex, 411
- Critical duration, 335
- Cross-reacting material, 573
- $\alpha$ -Crystallin, 581
- $\beta$ -Crystallin, 41, 243, 389
- $\gamma$ -Crystallin, 243, 683
- Crystallins, 567
- Crystalline lens, 463
- Culture, 443
- Cyanate, 567
- Cyclic AMP, 299, 471, 699
- Cycling assay, 601
- Cysteine, 361
- Cytoskeletal mRNA, 513
- Dermatan sulfate, 57
- Desquamation, 21
- Development, 527, 673, 683
- Diabetic cataract, 9
- Diabetic corneal epithelium, 611
- Diarrhoea, 567
- Dilator, 471
- Disease, 553
- Disulfide, 9
- Divalent ions, 399
- Divalent metal ions, 313
- DNA, 451
- Dopamine, 659
- L-DOPA, 711
- Drugs, 553
- Drusen, 147
- EDTA-extractable protein, 495
- Electron microscopy, 673, 721
- Electrophoresis, 41
- Electroretinogram (ERG), 335, 381
- Embryo, 451, 527
- Endothelial cell ultrastructure, 299
- Endothelial cells, 181
- Endothelium, 129, 239
- Enzyme activities, 463, 573
- Enzyme specific antibodies, 573
- Epidemiology, 553

# INDEX

- Epithelial cells, 181
- Epithelium, 21
- Exchange diffusion, 543
- Experimental cataract, 543
- Extraretinopathy, 213
- Eye, 81, 101, 147, 327, 451, 527
- FGF, 181
- Fiber membranes, 399
- Fibroblast, 129
- Fin, 451
- Fluorescence, 591
- Fluorescence microscope, 711
- Foreign bodies, 691
- Fructosediphosphate aldolase (ALD), 573
- GABA, 239, 729
- Gap junctions, 495
- Gene duplication, 243
- Glaucoma, 721
- Glial cells, 213
- $\beta$ -Glucuronidase, 691
- Glutathione, 601
- Glutathione peroxidase, 425
- Glycine, 729
- Glycine uptake, 373
- Glycosaminoglycans, 57, 443
- Glycosylation, 9
- Growth potential, 247
- Healon, 81, 101, 119
- Heat lability of enzymes, 573
- Heterologous and homologous chain association, 581
- High-affinity uptake, 373
- High-affinity uptake of GABA, 729
- Homocitrulline, 567
- [ $^3$ H]thymidine, 451
- Human, 227, 361
- Human cadaver eyes, 247
- Human cataract, 553
- Human  $\beta$ -crystallin, 41
- Human eyes, 721
- Human retina, 729
- Hyalocyte, 129
- Hyaloid arteriole, 129
- Hyaluronic acid, 81, 101, 119
- Hyperglycemia, 463
- Immature mice, 21
- Immunochemical analysis, 41
- Immunochemistry, 389
- Immunofluorescence, 721
- Immunohistochemistry, 683
- Immunoprecipitation, 1
- Implants, 451
- Implicit time, 335
- Inactive enzyme molecules, 573
- Inflammation, 81, 101
- Inhibitors, 313, 411, 611
- Insulin, 239
- Intermediate filaments, 487
- Internal duplication, 243
- Intraocular pressure, 101, 721
- Iodination, 1, 389
- Ionophore, 543
- Iris, 289, 299, 471
- Isoelectric focusing, 41
- Isolation technique, 247
- Isoproterenol, 289, 299
- Isoproterenol-sensitive adenylate cyclase, 659
- Keratan sulfate, 57
- Keratoconus, 435
- Lens, 67, 227, 313, 399, 411, 451, 463, 481, 483, 487, 495, 505, 527, 543, 567, 573, 581, 591, 601, 637, 651, 665, 673, 683
- Lens epithelium, 601
- Lens protein profiles, 553
- Lens proteins, 389
- Lens suspension culture, 513
- Lentoid body, 535
- Lesion, 81
- Light microscopy, 673
- Light-integration, 335
- Log-normal distribution, 623
- Lysosomal enzymes, 691
- Macaca mulatta*, 67, 81, 101, 147
- Magnesium, 665
- Main intrinsic protein, 495
- Medium-pH, 543
- Membrane, 487, 495, 505, 637
- Membrane conductance, 651
- Messenger RNA, 513
- Methionine, 361
- Mice, 21
- Microphthalmia, 673, 683
- Mitosis, 451
- Monkey iris, 471
- Morphogenesis, 527
- Morphopathology, 553
- Mouse, 535
- Mouse lens, 543
- Multilayered fenestrated sheets, 129
- Muscimol, 729
- Mutant, 673, 683
- NAD $^{+}$ , 601
- NADH, 601
- NADP $^{+}$ , 601
- NADPH, 601
- Na-hyaluronate, 119
- Na $^{+}$ -K $^{+}$  ATPase, 351
- Na $^{+}$ -K $^{+}$  ATPase activity, 543
- Nervous tissue, 247
- Neural retina, 213
- Neurotransmitters, 729
- Nigericin, 543
- Non-linear analysis, 381
- Nonpigmented ciliary epithelial cells, 691
- Nontryptophan fluorescence, 591
- Noradrenaline, 711
- Norepinephrine, 659
- Normal human eyes, 721
- Nuclear, 227
- Ocular, 451



# INDEX

- Oligosaccharides, 57
- Opsin, 251
- Organ culture, 683
- Osmotic, 227, 505
- Owl monkey, 81, 101, 147
- Oxidation, 361
- Oxidative damage, 425
- Oxygen consumption, 271
- Oxygen transport, 725, 727
  
- Pakistan, 567
- Pericytes, 247
- Permeability, 289
- Peroxidase, 425
- Phagocytosis, 691
- Phosphofructokinase (PFK), 573
- Photoreceptor, 271, 373
- Phototransduction, 271
- Pigment epithelium, 101, 251
- Plasma, 181
- Plasma constituents, 553
- Plasma membrane, 487
- Polymerization, 591
- Polypeptide, 43000 dalton, 41
- Polypeptides, 495
- Postmortem changes, 247
- Post-translational protein changes, 573
- Potassium, 373, 637, 651
- K<sup>+</sup> concentration, 543
- Potential, 637
- Prealbumin, 201
- Primary open-angle glaucoma, 721
- Primate, 81, 101, 381
- Primitive muscle cell, 129
- Prostaglandins, 699
- Protein, 495, 553, 591, 721
- Protein conformation, 573
- Protein evolution, 243
- Protein synthesis, 251
- Proteinase, 313
- Proteoglycan, 57, 443
- Pyridine nucleotides, 601
  
- Rabbit, 119, 573, 691
- Radioimmunoassay, 1, 389
- Rat iris, 289
- Rats, 527, 573
- RCS rat, 251
- Reepithelialization of denuded cornea, 611
- Reserpine, 711
- Retina, 31, 147, 213, 271, 335, 373, 381, 601, 659, 711, 725, 727, 729
- Retinal degeneration, 147, 373
- Retinal dystrophy, 251
- Retinal pigment, 147
- Retinal pigment epithelium, 335, 351
- Retinal vessels, 247
- Retinoic acid, 443
- Retinol-binding protein, 201
- Rhesus, 67, 81, 101, 147
  
- Rhodopsin, 1
  
- Scanning electron microscopy, 119, 167, 399, 487
- Scanning and transmission microscopy, 21
- Schlemm's canal, 721
- Second antibody, 1
- Selenite, 327
- Selenium, 327
- Selenomethionine, 327
- Senile cataract, 9
- Sequence homology, 243
- Serotonin, 31
- Serum, 181
- Solubilized adenylate cyclase, 659
- Sodium, 373
- Spatial cell density, 711
- Specified drugs, 553
- Specular microscopy, 623
- Sphincter, 471
- Statistical comparison, 711
- Sulfhydryl, 9
- Sulfhydryl groups, 313
- Superoxide dismutase, 425
  
- Taurine, 373
- Taurine uptake, 373
- Taurine-deficient cat, 373
- Tear fluid, 201
- Temporal summation, 335
- Timolol maleate, 289, 299
- Tissue culture, 247
- Trabecular endothelium, 721
- Transduction, 271
- Transformed lens cells, 513
- Transparency, 399
- Tropical, 567
- Trypsin, 411
- Tryptamine, 31
- Turbidity, 399
  
- Ultraviolet light, 313
- Uraemia, 567
- Urea, 567
  
- Valinomycin, 543
- Variance components, 623
- Vascular endothelium, 247
- Vascular morphology, 299
- Vertebrate photoreceptor, 271
- Vision, 271
- Vitamin A, 201
- Vitreous, 67, 81, 101, 213
- Vitreous haemorrhage, 381
- Vitreous replacements, 81, 101
- Vitreous, 67, 81, 101
- Voltage clamp, 651
  
- c-Wave, 335
- Wound healing, 167

